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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,043	08/30/2001	Hiroyuki Karasawa	Q66025	7325

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SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213

EXAMINER

HANNAHER, CONSTANTINE

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 06/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/942,043

Applicant(s)

KARASAWA, HIROYUKI

Examiner

Constantine Hannaher

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohyama *et al.* (US004767927A) and Verbeke (US005814831A).

With respect to independent claim 1, Ohyama *et al.* suggests a method corresponding to the illustrated radiation image read-out apparatus (Fig. 1) which would comprise the steps of linearly irradiating stimulating rays (column 3, lines 4-8) onto an area of a surface of a stimuable phosphor sheet 10 on which a radiation image has been stored (column 2, lines 59-61) with stimulating ray irradiating means 30 to cause the recited result, collecting the emitted light with a light collecting optical system 26, receiving the collected light with a line sensor 28 (column 4, line 1) of the recited type (column 5, line 60-62), and moving the stimuable phosphor sheet 10 with respect to the stimulating ray irradiating means 30, the light collecting optical system 26, and the line sensor 28 in a sub-scanning direction **X** which intersects with a length direction **Y** of the linear area exposed (that is, irradiated). The end face of the optical device in the method of Ohyama *et al.* has no special shape (Fig. 3). Nevertheless, the problem of stimulating rays reflecting from the surface of the stimuable phosphor sheet and then reflecting from the end face of a light collecting optical system is known in the art of radiation image read-out methods, and Verbeke shows (Fig. 2) that the end face 30 of a light collecting optical system 12 (column 5, lines 56-59) is formed into a shape such that the

stimulating rays **32** which have been reflected from the surface of the stimuable phosphor sheet **33** are reflected by the end face **30** toward **P'** (which is toward a region of the stimuable phosphor sheet **33** located more forward with respect to the sub-scanning direction **11** [Fig. 1] than the linear area exposed to [irradiated by] the stimulating rays **31**). In view of the minimization of the adverse effects of flare in a radiation image readout method as described by Verbeke, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the end face of the light collecting optical system **26** in the method of Ohyama *et al.* to be formed in a shape as suggested by Verbeke.

With respect to dependent claim 2, the optical device **26** in the method of Ohyama *et al.* is a gradient index lens array (column 3, lines 50-55).

With respect to independent claim 6, Ohyama *et al.* discloses a radiation image read-out apparatus (Fig. 1) comprising stimulating ray irradiating means **30** for linearly irradiating stimulating rays (column 3, lines 4-8) onto an area of a surface of a stimuable phosphor sheet **10** on which a radiation image has been stored (column 2, lines 59-61) to cause the recited result, a line sensor **28** (column 4, line 1) of the recited type (column 5, line 60-62), a light collecting optical system **26** located between the line sensor **28** and the stimuable phosphor sheet **10** for the recited purposes, and sub-scanning means **12** for moving the stimuable phosphor sheet **10** with respect to the stimulating ray irradiating means **30**, the light collecting optical system **26**, and the line sensor **28** in a sub-scanning direction **X** which intersects with a length direction **Y** of the linear area exposed (that is, irradiated). The end face of the optical device in the apparatus of Ohyama *et al.* has no special shape (Fig. 3). Nevertheless, the problem of stimulating rays reflecting from the surface of the stimuable phosphor sheet and then reflecting from the end face of a light collecting optical system is known in the art of radiation image read-out apparatus, and Verbeke shows (Fig. 2) that the end

face 30 of a light collecting optical system 12 (column 5, lines 56-59) is formed into a shape such that the stimulating rays 32 which have been reflected from the surface of the stimuable phosphor sheet 33 are reflected by the end face 30 toward P' (which is toward a region of the stimuable phosphor sheet 33 located more forward with respect to the sub-scanning direction 11 [Fig. 1] than the linear area exposed to [irradiated by] the stimulating rays 31). In view of the minimization of the adverse effects of flare in a radiation image readout apparatus as described by Verbeke, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the end face of the light collecting optical system 26 in the apparatus of Ohyama *et al.* to be formed in a shape as suggested by Verbeke.

With respect to dependent claim 7, the optical device 26 in the apparatus of Ohyama *et al.* is a gradient index lens array (column 3, lines 50-55).

3. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohyama *et al.* (US004767927A) and Verbeke (US005814831A) as applied to claim 1, 2, 6, or 7 above, and further in view of Miyagawa (US005455428A).

With respect to dependent claim 3, the end face in the method suggested by Ohyama *et al.* and Verbeke would not affect regularly reflected stimulating rays. However, Miyagawa shows (Fig. 2) that regularly reflected stimulating rays 3 may be reflected by the end face 2a of an optical device 2 to a point C' which, in view of Fig. 3, would be within one of the recited categories. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method suggested by Ohyama *et al.* and Verbeke to shape the end face of the optical element to reflect regularly reflected stimulating rays to a point which minimized the effects of flare.

With respect to dependent claim 8, the end face in the apparatus suggested by Ohyama *et al.* and Verbeke would not affect regularly reflected stimulating rays. However, Miyagawa shows (Fig. 2)

that regularly reflected stimulating rays 3 may be reflected by the end face 2a of an optical device 2 to a point C' which, in view of Fig. 3, would be within one of the recited categories. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus suggested by Ohyama *et al.* and Verbeke to shape the end face of the optical element to reflect regularly reflected stimulating rays to a point which minimized the effects of flare.

4. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohyama *et al.* (US004767927A) and Verbeke (US005814831A) as applied to claims 1, 2, 6, or 7 above, and further in view of Nakamura *et al.* (US005540859A).

With respect to dependent claim 4, the stimuable phosphor in the stimuable phosphor sheet in the method suggested by Ohyama *et al.* and Verbeke is a choice within the ordinary skill in the art. Nakamura *et al.* teaches that a stimuable phosphor with the recited properties is known (column 3, line 9, column 6, line 39). Depending on the desired radiation image, it would have been obvious to specify that the stimuable phosphor in the sheet used in the method suggested by Ohyama *et al.* and Verbeke was of the type suggested by Nakamura *et al.*

With respect to dependent claim 9, the stimuable phosphor in the stimuable phosphor sheet in the apparatus suggested by Ohyama *et al.* and Verbeke is a choice within the ordinary skill in the art. Nakamura *et al.* teaches that a stimuable phosphor with the recited properties is known (column 3, line 9, column 6, line 39). Depending on the desired radiation image, it would have been obvious to specify that the stimuable phosphor in the sheet used in the apparatus suggested by Ohyama *et al.* and Verbeke was of the type suggested by Nakamura *et al.*

5. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohyama *et al.* (US004767927A) and Verbeke (US005814831A) and Nakamura *et al.* (US005540859A) as applied to claim 4 or 9 above, and further in view of Arakawa *et al.* (US004571496A).

With respect to dependent claim 5, Arakawa *et al.* shows that the provision of another layer of phosphor in a stimutable phosphor sheet is known. In view of the improved image quality described by Arakawa *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the stimutable phosphor sheet in the method suggested by Ohyama *et al.*, Verbeke, and Nakamura *et al.* to be provided with a layer of phosphor. Nakamura *et al.* teaches that another layer of the same phosphor as the stimutable phosphor would have the recited property (column 7, lines 31-37).

With respect to dependent claim 10, Arakawa *et al.* shows that the provision of another layer of phosphor in a stimutable phosphor sheet is known. In view of the improved image quality described by Arakawa *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the stimutable phosphor sheet in the apparatus suggested by Ohyama *et al.*, Verbeke, and Nakamura *et al.* to be provided with a layer of phosphor. Nakamura *et al.* teaches that another layer of the same phosphor as the stimutable phosphor would have the recited property (column 7, lines 31-37).

Response to Submission(s)

6. This application has been published as US2002/0036277A1 on March 28, 2002.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (703) 308-4850. The examiner can normally be reached on Monday-Friday with flexible hours.

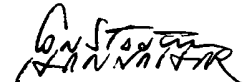
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone numbers for the organization

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where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ch
May 27, 2003


Constantine Hannaher
Primary Examiner